

*An Informational Report of the Institute of Transportation Engineers*

Survey of  
Traffic Circulation  
and Safety  
at School Sites



*Prepared by ITE's Transportation Safety Council Committee TSC-4S-08*



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October 1998

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J.L. Gattis

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*Prepared by ITE's Transportation Safety Council Committee TSC-4S-08*

## SURVEY OF TRAFFIC CIRCULATION AND SAFETY AT SCHOOL SITES

The Institute of Transportation Engineers (ITE) is an international educational and scientific association of transportation and traffic engineers and other professionals who are responsible for meeting mobility and safety needs. The Institute facilitates the application of technology and scientific principles to research, planning, functional design, implementation, operation, policy development and management for any mode of transportation by promoting professional development of members, supporting and encouraging education, stimulating research, developing public awareness, and exchanging professional information; and by maintaining a central point of reference and action.

Founded in 1930, the Institute serves as a gateway to knowledge and advancement through meetings, seminars, and publications; and through our network of more than 15,000 members working in some 80 countries. The Institute also has more than 70 local and regional chapters and more than 90 student chapters that provide additional opportunities for information exchange, participation and networking.

This Institute of Transportation Engineers (ITE) Informational Report, *Survey of Traffic Circulation and Safety at School Sites*, presents the responses from a survey of planning and engineering practices related to traffic safety and circulation at elementary and middle schools.

This report was prepared by ITE's Transportation Safety Council Committee TSC-4S-08. Members of this committee are: Dan Burden; James M. Cheeks Jr. (M); Jason A. Crawford (A); Linda B. Crider; James L. Gattis, P.E., Chair (M); Terese A. Gorman, P.E.; Neal R. Hawkins, P.E. (M); Cynthia A. Jampole, P.E. (M); James C. Jeffrey III, P.E.; Robert T. Johnson Jr., P.E. (M); Karl L. Kleitsch, P.E. (F); Chester R. Kropidowski, P.E. (F); C. Richard Kuykendall (M); Eduardo C. Serafin, P.E. (M); Riyaj A. Shaik (A); James J. Stanek Jr., P.E. (A); Michael J. Wallwork, P.E. (M); Guy W. Winton III, P.E. (M); Shirley A. Wollner (IA).

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# Preface

This informational report was prepared by Institute of Transportation Engineers (ITE) Committee TSC-4S-08, “Traffic Circulation and Safety at School Sites.” The report presents the responses from over 100 questionnaires sent to transportation engineers and planners in the mid-1990s. Most of those responding were employed by city or county agencies; a few were state department of transportation (DOT) employees.

The committee’s scope included planning, design, and operations actions. The scope was limited to elementary and middle schools, i.e., it excluded schools at which students were of driving age. At existing schools, the work objectives were:

1. to examine transportation planning and engineering concepts for improving traffic safety, circulation, and access;
2. to identify alternative solutions for improving safety and reducing congestion; and
3. to identify geometric design approaches and traffic controls (e.g., signs, signals, markings, adult crossing guards) needed to implement a safe and efficient school site circulation plan.

At new school sites, the work objective was:

4. to examine transportation planning and engineering concepts, policies, and procedures for selecting a new neighborhood school site, to provide safety and good traffic flow.

To perform the work, committee members drafted a written survey instrument, pretested it on a small sample, and then revised it before the individual committee members mailed it to transportation engineers and planners in their geographic area. Completed survey forms were returned to the committee members, who in turn forwarded them to the committee chair. Responses were totaled and comments were transcribed.

This report is divided into four sections. The first section is a “summary article” of the responses. The second lists the responding cities, counties, and states (grouped by state). The third section presents, in a side-by-side column format, both the questionnaire and the total number responding “yes” or “no” to each question. The fourth section contains the comments and short-answer responses offered by those replying to this survey.

A minimal amount of editing was performed. A few responses were not readable or did not seem to “fit” the question and were not included. Some respondents did not respond to some questions. Some state DOTs may have submitted responses from different district offices; therefore, total number of responses may not equal number of agencies listed.



## Acknowledgments

This report was made possible by the more than 100 local and state agency personnel who took time to respond to the survey form. Their assistance to improve transportation practices associated with schools is appreciated.

We also wish to recognize the following staff and students at the University of Arkansas Civil Engineering Department, who helped compile surveys and proofread the transcriptions: Sejla Bakalovic, Cynthia Douthit, Sonny Low, Richard McConnell, and Scott Nelson.

## Table of Conversions

To convert feet (ft) to meters (m), multiply by 0.3048

To convert miles per hour (mph) to kilometers per hour, multiply by 1.61



# Section 1

## Survey of Traffic Circulation and Safety at School Sites

### INTRODUCTION

To learn more about current school transportation and traffic practices and concerns, ITE Committee TSC-4S-08 surveyed transportation engineers and planners in the mid-1990s. Most of those who responded were employed by city or county agencies; a few were state department of transportation (DOT) employees.

At existing schools, the committee wanted to find concepts for improving traffic safety, circulation, and access; identify alternative solutions for improving safety and reducing congestion; and identify geometric design approaches and traffic controls (e.g., signs, signals, markings, adult crossing guards) needed to implement a safe and efficient school site circulation plan. At new school sites, the group wanted to outline transportation concepts, policies, and procedures for selecting a new neighborhood school site, to enhance safety and good traffic flow.

The questionnaire considered planning, design, and operations actions. The scope was limited to elementary and middle schools; it excluded schools at which students were of driving age.

The committee received 118 responses from 20 states. Two forms were not usable, so the committee compiled 116 forms submitted by 111 agencies.

Responses came from many geographical regions in the United States. Larger urban areas and smaller towns were both represented. Because responses came from local and state agencies that either employed transportation engineers and planners, or at least had some transportation expertise, it may be that the responses represent “above average” or “more advanced” conditions. That is, the many areas of the country in which transportation considerations receive little or no consideration may have been underrepresented in the survey.

### FINDINGS

By totaling and summarizing survey responses, trends could be identified and unique practices noted. Much attention was devoted to traffic control device use, site layout, and the challenges of dealing with other government agencies and with the public.

#### Speed Zones

The most commonly displayed message telling drivers when school zone speed restrictions were in effect was the sign stating speed restrictions are in effect “WHEN FLASHING.” Many others posted either “WHEN CHILDREN PRESENT” or posted specific times during the school day to inform motorists when the reduced speed limits were in effect.

Most jurisdictions posted either 20 mph or 25 mph as the school zone speed. A few reported that the functional class of the street affected what limit was posted.

Excluding those school speed zones in effect for 8 hours or more, the average duration of the morning restriction was 1.2 hours, and the average afternoon duration was 1.0 hour. Some state laws create statewide uniformity by specifying times during which school speed zones are in effect.

### **Traffic Control Devices**

The use of both standard and innovative traffic control devices to improve flow and safety around and near schools was reported. A few stated that year-around school or school breakfast programs had affected speed zone policies. A few areas have developed their own special signs to communicate that the zone is in effect all year.

A small proportion of those cities or areas that responded have developed or used unique traffic control hardware [such as special signs, signals, etc. not in the *Manual on Uniform Traffic Control Devices, MUTCD* (FHWA 1988)]. Some were experimenting with the new yellow-green color for some school zone crosswalk signs.

Almost one-quarter of the jurisdictions either place traffic cones on the street, signs in the middle of the street, or use other temporarily placed traffic control devices to get the attention of passing motorists. Some places reported using these measures even though it was against state law.

### **Routing and Layout**

A number of those responding noted the need for site layout patterns that would separate vehicle and pedestrian conflicts. Some have developed pedestrian routing plans and used crossing guards to address safety concerns.

Three surveys noted that parking prohibitions helped. Many reported using sidewalks or physical separations between the pedestrians and the vehicles to improve safety. Others segregated “parent” loading from bus loading areas. A few recognized a need to locate schools away from higher volume, higher speed arterial streets, and some reported trying to influence school site and/or neighborhood layout so pedestrian and bicycle routes could cut through lower volume areas and avoid high traffic volume places.

Unsolicited material from a Canadian source contained specific details and drawings to help the site planner merge urban design practices with traffic safety principles (Mississauga). The following list presents just a few of the many good details from this Canadian municipality.

1. Elementary schools should not be located on arterial or major collector roads.
2. Avoid transit stops, news vending boxes, mailboxes or on-street parking between the drop-off zone entrance and exit points along the school frontage.
3. Buildings should be parallel to the street and have parking located at the side or rear of the property.
4. Pedestrian/vehicle crossovers should be minimized.
5. School buses should use designated drop-off aisles that are adjacent to the school building and require minimal on-site turning movements.

### **Alternative Modes**

Some try to facilitate bicycle usage. The success of demand-reduction strategies (e.g., carpooling) was mixed.

### **Need for Information**

A number of respondents identified needs for research studies and development of warrants or procedures. More information about the

effectiveness of school speed zones, procedures for site selection and good site design, and when to install or use school traffic controls (e.g., speed zones, flashers, crosswalks, or marked crossing guards) was requested. Better information is needed not only so transportation engineers and planners can better evaluate school zone traffic needs, but also to support and enhance recommendations made to political governing bodies.

### **Positive and Negative Interactions with Others**

Some jurisdictions felt they had good contact and communication with school officials and police. Many have standing formal committees to deal with school traffic issues. Others rely on informal working relationships.

Over three-quarters of those responding said when property was being platted in their area, a person with traffic engineering/planning expertise was empowered to review development plans and dictate requirements to ensure that school vehicular and pedestrian considerations were addressed as streets were laid out. About 60 percent said a person with traffic engineering/planning expertise had traffic safety and good circulation input into the actual site design for school building, parking lot, and driveway construction. However, only about one-third had meaningful input into the selection of a new school site.

A few responded that parents or interest groups caused problems. Some of these problems could be categorized as adverse driving behaviors, such as parking in no-parking areas, or driving children to school instead of letting the children walk. A different type of parent problem was the emotional, unfounded demand for “somebody to do something.”

Unfortunately, many also reported inadequate working relationships and procedures. Both school and local officials were reported to be contributing more to the problem than to the solution. Processes to factor in traffic safety and flow considerations during the planning and design stages were inadequate, with predictable results: intractable problems were created.

---

### **SUBMITTED DOCUMENTS AND WARRANTS**

About one-quarter of those returning the questionnaires also sent various supporting documents. These included copies of national publications, laws and ordinances, and locally developed warrants and specifications. These agencies had developed warrants or specific procedures to evaluate the need for school zones, for school zone traffic control devices, or for school zone adult crossing guards. A more complete study of such procedures could help generate guidelines for widespread traffic engineering use.

Some of the documents listed sound transportation engineering principles, but offered little in the way of objective, quantitative procedures: “engineering judgment” was often called for. The following excerpts are not a complete listing of all submitted material, but they are included to reflect the types of material submitted, with an emphasis on quantitative warrants.

Some of the enclosed articles and reports expressed a perspective about fundamental or underlying aspects of the school traffic problem. One was an article from a 1997 issue of *Westernite*. The author offered the following reflection of the problem: “Surveys identify concerns about traffic safety among the top three reasons cited for children not walking or biking to school. However, there is no evidence that bicycling or walking is significantly

more dangerous than driving in a vehicle. . . . It is ironic that parents won't let their children walk or bike to school because of traffic concerns, then drive them to school, contributing to the [pedestrian-vehicle conflict traffic safety] problem” (Daisa 1997).

Comments about the effectiveness of school speed zones were included. From New York state: “Based on our studies, we have shown that posting a lower speed limit in the vicinity of a school has little or no impact on the speeds that motorists drive, particularly when they do not observe any school pedestrians for most of the time period the lower speed limit is in effect.” [State law establishes 7:00 a.m. through 6:00 p.m. as the effective period (Monroe).] A Des Moines study (Hawkins) found that a school speed limit program produced a drop in speeds that was statistically significant, but small (2 to 3 mph).

### **A Comprehensive Approach**

Some submitted documents did not focus on a single issue, but instead encompassed a broad range of considerations.

An old ITE publication (with ITE listed as Institute of *Traffic Engineers*), *A Program for School Crossing Protection* (ITE 1962), recommended establishing a local School Traffic Safety Committee and developing a school route plan. It also included a process to analyze the need for crossing protection and for selecting the appropriate measure when protection was warranted. The report contains information that is similar to Part VII of the 1988 *Manual on Uniform Traffic Control Devices*.

A California agency (San Diego 1990) produced a booklet that spells out warrants and procedures for when certain actions will be taken. The document

details the following responsibilities for the School Safety Advisory Committee, schools, public works, and police:

1. School Safety Advisory Committee—establish policies, review complaints;
2. school—instruct students in the use of the “suggested route to school” plan;
3. public works—install traffic control devices, trim vegetation, construct walkways;
4. parents—instruct children, abide by posted regulations;
5. police—enforcement.

The suggested routes to school are established jointly by the school, public works, and police.

The policy from a midwestern town addressed signs, beacons, adult crossing guards, multiway STOP signs, and traffic signals; some of the warrants were from the *MUTCD*. An index to help assess both the needs and the priorities for crossing guards was generated.

One city had a written policy for pedestrian separation structures, walkways, flashing beacons, crossing guards, parking and loading controls. Another local specification established criteria for when and where certain traffic control devices would be installed. Still another municipality spelled out the type of school crossing protection, ranging from none to traffic signal, as a function of pedestrian volume and availability of safe gaps in the traffic stream.

In a western state, the proposed curtailment of pupil transportation (school bus) services to a particular school prompted the preparation of a written traffic assessment of the proposed action's impacts. The anticipated impacts included increased parking requirements, adding traffic to an already congested street, and pollution.

## Flashing Beacon Warrants

The following guidelines for installing flashing beacons depict a range of procedures. Some attempt to consider the effects of many factors.

To warrant the installation of school crossing flashing yellow beacons at a currently uncontrolled intersection, one procedure called for these criteria to be met: (1) at least 600 feet from the nearest controlled crossing (STOP signs, signals, or adult guards); (2) at least 40 school-age pedestrians during each of two hours; and (3) more than 200 vehicles per hour during school coming and going times. In addition, there had to be either limited visibility or a speed above 35 mph.

Another set of procedures stated that every street adjacent to an elementary school is eligible for a school speed zone if the volume exceeds 7,000 vehicles per day. An overhead flashing school zone is warranted if volume is greater than 22,000 vehicles per day.

One city generated a graph to warrant flashers, based on volume of pedestrians and volume of vehicles in the two peak hours.

Finally, the "Traffic Ordinance" in one locale does it the "old fashioned way": "The chief of police is authorized to designate school speed zones . . . [in effect] . . . when flashing beacons are operational. Suitable speed limit signs shall be posted . . ."

## Adult Crossing Guard Warrants and Costs

A number of adult crossing guard warrants were tendered. A common thread among the warrants is an attempt to quantify and rank the number and severity of potential school pedestrian conflicts with vehicles.

### Example 1—Adult guard at school crossing:

$$\text{total points} = (\text{volume during school hours}) \times (1.0, \text{ or } 1.2 \text{ if speed } > 30 \text{ mph}) + 4 \times (\# \text{ of trucks}) + 4 \times (\# \text{ of turning vehicles}) + (\text{number of children in crosswalk}).$$

Other factors are also considered.

### Example 2—Adult crossing guards may be used under the following conditions:

1. at uncontrolled intersections where there is no alternate controlled crossing within 600 feet, and minimum pedestrian and vehicle volumes are met;
2. at STOP sign-controlled crossings where traffic volume exceeds 500 vehicles per hour when the school children are coming or going from school;
3. at signal-controlled intersections, where there are more than 300 vehicle-turning movements per hour through the crosswalk when in use by school children.

### Example 3—Establish a rating procedure for adult school crossing guards:

$$G/PG \times F/P \times 1,000$$

where

$G$  = the number of critical gaps during the peak 15-minute crossing period,

$PG$  = the maximum number of pedestrian groups during the peak 15-minute crossing period,

$P$  = actual number of pedestrians crossing during the peak 15-minute crossing period,

$F$  = a crossing ability factor of 1.0 for high school, 1.5 for middle school, and 2.0 for grade school.

**Example 4**—After ranking all crossings, the finite number of adult crossing guards are allocated to those sites with the highest ranking, but only at elementary schools. The location must also lie on a “safe route to school,” and be within 1,500 ft of the school.

- n Number of children crossing: 0–20 points
- n Width of street crossed: 0–30 points
- n Vehicular traffic volume: 0–30 points
- n Speed limit: 0–35 points
- n Existing traffic control: 5–15 points
- n No safety patrol: 10 points

**Example 5**—A crossing guard hazard ranking:

$$\text{Index} = 3 \times P + 1.5 \times RW + ADT + SL + 2 \times PF$$

where  $P$  ranges from 1 to 4, based on pedestrian volume;  $RW$  ranges from 1 to 3, based on roadway width;  $ADT$  ranges from 1 to 3, based on daily volume;  $SL$  is 1 if the speed limit  $\leq 30$  mph or 2 if 35–45 mph; and  $PF$  is 1 if junior high, 2 if elementary.

**Example 6**—An adult crossing guard is warranted if two of the three following conditions are met:

1. meets ITE school crossing formula;
2. there are 25 or more students that cross the intersection on all legs in a day;
3. three of the following six are met—
  - (a) no alternative route available
  - (b) posted speed over 30 mph or 85th percentile speed  $\geq 35$  mph
  - (c) 24-hour traffic volume on any intersection leg  $\geq 3,000$
  - (d) no safety patrol at intersection

- (e) intersection has unusual geometrics or conditions
- (f) traffic control is not present on every leg

A study of crossing guards in several Texas cities (Withrow 1994) found four funding methods had been used: city, school district, combination of city and school district, and individual school funding. The paper reported that in all cases, school-administered crossing guard programs had the least per-guard cost (\$1,535). The overall average annual cost per guard was \$2,990. Almost all of the over 30 programs provided crossing guard training.

## CLOSING

It is hoped that this report will inform the profession of the current state of transportation engineering and planning practice related to elementary and middle schools, and identify issues that practicing professionals need to address to provide a safer and more convenient transportation environment to the public.

## REFERENCES

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- Daisa, James M. 1997. “Children, Traffic and Safety.” *Westernite*, 51 (2) (March-April 1997): 1. District 6 ITE.
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- Hawkins, N.R. *Modified Signs, Flashing Beacons, and School Zone Speeds*. Des Moines, IA: City of Des Moines Traffic and Transportation Department.

Institute of Traffic Engineers. August 1962. *A Program for School Crossing Protection*. Washington, DC.

Monroe County Department of Transportation. *Policy for School Zone Signing-Flashing Beacons*. Rochester, NY.

San Diego County Department of Public Works. 1990. *School Traffic Safety Policies and Warrants*. San Diego, CA.

Withrow, T. 1994. *School Crossing Guard Survey*. Amarillo, TX: City of Amarillo Community Services Division.



# Section 2

## LIST OF RESPONDING AGENCIES

Personnel in the following city, county, and state agencies completed and returned forms to committee members. Some state transportation departments submitted more than one response.

### ARKANSAS

Fort Smith  
North Little Rock

### CALIFORNIA

Caltrans  
Chula Vista  
Encinitas  
Imperial County  
Irvine  
Lemesa  
Los Angeles  
Oceanside  
Poway  
San Diego  
San Diego County  
Vista

### CONNECTICUT

Hartford  
West Hartford

### FLORIDA

Florida DOT  
Alachua County  
Broward County  
Clearwater  
Dade County  
Gainesville  
Jacksonville  
Tampa

### ILLINOIS

Chicago  
Hoffman Estates  
Lake County  
Rockford  
Schaumburg  
Skokie  
Wheaton  
Winnetka

### IOWA

Ames  
Ankeny

Cedar Falls  
Cedar Rapids  
Council Bluffs  
Des Moines  
Iowa City  
Urbandale  
Waterloo  
West Des Moines

### KANSAS

Dodge City  
El Dorado  
Junction City  
Kansas City  
Lawrence  
Lenexa  
Manhattan  
McPherson  
Olathe  
Ottawa  
Overland Park  
Salina  
Wichita

MASSACHUSETTS

Brookline  
Cambridge  
Lowell  
Somerville

MISSOURI

Missouri DOT  
Cape Girardeau  
Clayton  
Raytown

MICHIGAN

Michigan DOT  
Ann Arbor  
Battle Creek  
Grand Rapids  
Isabella County  
Jackson  
Kent County  
Lansing  
Mason  
Monroe County  
Mt. Pleasant  
Washtenaw County  
Wayne County

NEBRASKA

Grand Island

NEW JERSEY

Union County

NEW YORK

Babylon  
Brookhaven  
Elmira  
Huntington  
Islip  
Mineola  
Monroe County  
Smithtown  
Syracuse  
Yaphonk

NORTH CAROLINA

Greensboro  
Raleigh  
Rocky Mount  
Winston-Salem

OKLAHOMA

Norman  
Oklahoma City  
Ponca City  
Tulsa

OREGON

Oregon DOT  
Beaverton  
Clackamas County  
Lane County  
Portland  
Salem  
Tigard  
Washington County

PENNSYLVANIA

PENNDOT  
Allegheny County

TENNESSEE

Chattanooga  
Knoxville

TEXAS

Amarillo  
College Station

VERMONT

Rutland

# Section 3

## Questionnaire and Totals

This section presents numerical totals. Refer to the following section to view responses to “short answer” queries.

A. SCHOOL ZONE SPEED	Number of Responses ↓
1. What message does your city (area) use on signs to tell the drivers when school zone speed restrictions are in effect?	
a. Signs state that speed restrictions are in effect “WHEN FLASHING” . . . . .	62
b. Signs state that speed restrictions are in effect “WHEN CHILDREN PRESENT” . . . . .	40
c. Signs state that speed restrictions are in effect during specifically posted times (the posted times may vary from school to school) . . . . .	42
IF you marked “c” then the prevalent posted time at most school zones is	
morning: _____ a.m. to _____ a.m.	
afternoon: _____ p.m. to _____ p.m.	
other: _____ m. to _____ m.	
d. Other; please explain. Comment if any factors other than “when school starts and ends” affect setting school speed zone times (such as functional class). . . . .	15

2. Some cities choose one speed (such as 25 mph) as the school zone speed posted at almost all sites (perhaps with state highways excepted). If your city (area) has one school zone speed limit that is “normal” or usually the posted school zone speed, then what speed is your “normal” school zone speed . . .

a. on all EXCEPT state highways? _____ mph; . . . . .	15 mph	13
	20 mph	38
	25 mph	31
	30 mph	0
on state highways?		
_____ mph . . . . .	10 mph	1
	15 mph	11
	20 mph	19
	25 mph	16
	30 mph	0
	35 mph	1
b. Have different limit for each functional class; please list . . . . .		3
c. Do not have a “normal” school zone speed limit (one used at most sites). . . . .		12

---

B. HARDWARE FOR TRAFFIC CONTROL

3. Has your city (area) either developed or used any unique traffic control hardware, such as special signs, signals, etc. NOT in the *MUTCD*?

- YES .....19
- NO .....88

**IF YES**, what is the device?

4. At school crosswalks, does your city (area) place traffic cones on the street, signs in the middle of the street, or use other temporarily placed traffic control devices to get the attention of passing drivers?

- YES .....25
- NO .....82

**IF YES**, please describe what device(s) is used.

---

C. LOCALLY DEVELOPED WARRANTS AND PROCEDURES

5. Has your city (area) developed any warrants or specific procedures to be followed when evaluating

- a. the need for a school zone?
  - YES .....25
  - NO .....84
- b. the need for school zone traffic control devices?
  - YES .....30
  - NO .....80
- c. the need for school zone adult crossing guards?
  - YES .....24
  - NO .....83

6. **IF YES** to 5a, 5b, or 5c, then . . . (**IF NO** to 5a, 5b, and 5c, then skip 6.)

- a. please send us a copy of the locally developed procedures, warrants. ....10 # rec'd

b. did your agency or anyone else perform any studies to develop these warrants or procedures for either traffic control devices or adult crossing guards?

- YES
- NO

7. Do you know of any study done by another city or group that can serve as an underlying basis for a procedure or warrant for school zone traffic control devices or adult crossing guards?

8. What studies need to be done or what warrants/procedures need to be developed so transportation engineers and planners can BETTER evaluate school zone traffic needs?

9. Briefly describe any transportation planning or engineering concepts/solutions your city (area) has developed for improving traffic safety, circulation, and access at existing school sites. Include any effective strategies for reducing the number of vehicular trips at or near school sites.

---

D. SITE DESIGN AND POLICY

10. When property is being platted in your city (area), is a person with traffic engineering/planning expertise empowered to review development plans and dictate requirements to ensure that school vehicular and pedestrian considerations will be addressed as streets are laid out?

- YES .....82
- NO .....26

11. In your city (area), does a person with traffic engineering/planning expertise have meaningful input in

a. school site selection; evaluating the desirability of a site for a future school for traffic safety and good circulation?

YES .....34

NO .....70

b. the actual site design for school building, parking lot, and driveway construction for traffic safety and good circulation?

YES .....60

NO .....43

12. What design (or policy) methods or techniques have been used in your city (area) to separate school pedestrians from vehicles both on and off the school site?

13. At new school sites in your city (area), describe any transportation planning and engineering concepts, policies, and/or procedures that affect the selection of a new neighborhood school site to ensure that safety and good traffic flow are maintained.

---

#### E. INSTITUTIONAL ORGANIZATION

14. Identify organizational arrangements/practices (such as cooperation between city government and independent school board) that are conducive to finding or implementing effective school traffic solutions.

15. Identify organizational arrangements/practices that are detrimental to finding or implementing effective school traffic solutions.



# Section 4

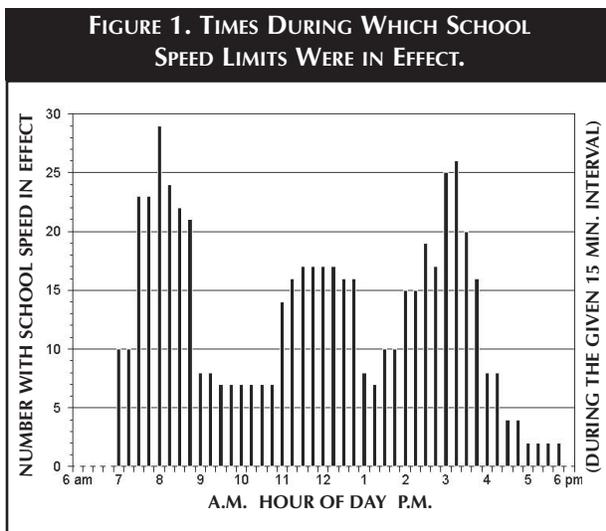
## Comments and Short-Answer Responses

The survey forms returned to the committee contained the following comments and short-answer responses. Within each question, related responses were grouped together.

### PART A SCHOOL ZONE SPEED

1. What message does your city (area) use on signs to tell the drivers when school zone speed restrictions are in effect?

- See questionnaire, numeric answers given.
- See questionnaire, numeric answers given.
- A total of 34 locales supplied detailed information about times during which school speed limits were in effect. As Figure 1 illustrates, school speed restrictions were more



likely to be in effect during the 7:30 to 9:00 a.m. and 2:30 to 4:00 p.m. periods than during other times of the day.

The average duration of the lowered limits was 1.4 hours between 6:00 and 10:00 am, 1.4 hours between 2:00 to 6:00 pm, and 4.2 hours between 6:00 a.m. and 6:00 p.m. If the 7 locales which had lowered limits in effect for 8 or more hours per day were excluded, the average 6:00 to 10:00 a.m. duration was 1.2 hours, and the 2:00 to 6:00 p.m. average duration was 1.0 hours.

- If other than “WHEN FLASHING,” “WHEN CHILDREN PRESENT,” or specifically posted periods, please explain. Comment if any factors other than “when school starts and ends” affect setting school speed zone times (such as functional class).

### Additional Comments about Flashers

- The city policy is flashing signs may be warranted on 4-lane streets with speed limit  $\geq 30$  mph when unusual geometric or sight restrictions exist. The time limit signs are somewhat undesirable because they are in effect all day but too many time intervals cannot be easily read by the driver.
- Breakfast programs extend the times on the zones.

- n Many schools serve breakfast. Flashers are set to accommodate kids arriving for breakfast normally 30 minutes before start of school.
- n We have flashing beacons on multilane and two-lane major streets. “Major” does not necessarily relate to functional class.
- n We use school flashers on arterial streets; use WHEN CHILDREN PRESENT on residential streets.

### Changeable Signs

- n Electrically operated folding signs open and display the message SCHOOL SPEED LIMIT 25 and a 12-inch yellow beacon on top of the sign flashes as long as the sign remains open.
- n We have one set of fiber optic changeable speed limit signs that changes from a regular 35-mph speed limit sign to SCHOOL 25 MPH SPEED LIMIT.
- n Variable message speed limit sign controlled by timer activated by adult crossing guard.
- n Variable school speed limit sign: a blankout message, a variable message or a message in effect during the operation of flashing beacons.
- n Variable speed limit signs. Lower the limit to 25 mph during school crossing periods.
- n Will soon be installing fiber-optic changeable message school signing in two zones.

### Set by State Law

- n Time is, by state law, based on when school is in session: 30 minutes before start of school until school begins, and from dismissal until 30 minutes thereafter.

- n (4 responses) No message is placed on the signs indicating when school speed zones are in effect, since the State Vehicle and Traffic Law establishes it from 7:00 a.m. to 6:00 p.m. on school days, whether the sign is static or with beacons. On signs with flashing beacons, the beacons are set to turn on and off at these times.
- n The school speed limit sign has the legend WHEN CHILDREN ARE PRESENT. The State Vehicle Code has a specific time of 7:00 a.m. to 4:00 p.m.

### No Special School Zones

- n We have no school zones. All areas in front of schools are 25 mph speed limit areas.
- n We have no school zones at present.
- n No restrictions; use school crossing warning signs.

### Other Comments

- n We use DO NOT ENTER signs at one location for a school.
  - n Use SCHOOL DAYS, MONDAY–FRIDAY.
2. Some cities choose one speed (such as 25 mph) as the school zone speed posted at almost all sites (perhaps with state highways excepted). **If** your city (area) has one school zone speed limit that is “normal” or usually the posted school zone speed, then what speed is your “normal” school zone speed?
    - a. See questionnaire, numeric answers given.
    - b. Have different limit for each functional class; please list.
    - c. Do not have a “normal” school zone speed limit (one used at most sites).

### Speed Limit is Related to Function or Area

- n Local—15 mph; collector—20 mph; 15 mph below posted speed limit; others WHEN CHILDREN PRESENT.
- n 20 mph for normally 25–35 mph collector; 25 mph for normally  $\geq 35$  mph arterial.
- n 20 mph for residential and collector; 25 mph for arterial.
- n All 20 mph in 30-mph zones, except one school speed on a 40-mph county road.
- n As per state law, 25 mph on most streets adjacent to schools; if the school fronts an arterial/collector, then 20 mph.
- n 25 mph in city, 45 mph in rural (suburban).
- n 35 mph in 4 locations: 4-lane, divided thoroughfares with 45-mph speed limit.
- n We have only used dual school speed zones on arterial streets.

### School Speed Limit is Based on Normal Speed Limit

- n Usually 1/2 the posted speed limit but never less than 15 mph.
- n Generally, 10 mph below posted speed limit; none lower than 20 mph.
- n 10 mph lower than normal speed limit, except none below 25 mph.
- n (3 responses) Normally the school speed limit is 10 mph below posted speed limit.
- n We post (per state law) 15 mph below normal speed limit.

- n State law says 15 mph less than speed limit posted during off times if sidewalks are present.

### Other

- n Have no schools on local streets with speed limits  $> 30$  mph.
- n The great majority of school crossing locations do not have special speed limit signs.

### PART B HARDWARE FOR TRAFFIC CONTROL

3. Has your city (area) either developed or used any unique traffic control hardware, such as special signs, signals, etc. NOT in the *MUTCD*?

YES NO

IF YES, what is the device?

### Beacons, Flashers

- n Overhead SCHOOL sign with integral flashers, fabricated in-house.
- n Flashing yellow lights mounted on PEDESTRIAN CROSSING sign post in advance of a signalized crosswalk. This exceeds the *MUTCD*.
- n We are using the flashing beacon arrangement, but it is operated by a typical pager.
- n We have found motorists do not adhere to school speed limits; therefore, we have installed flashing beacons on the advance school signs and had the beacons flashing only for the 1–2 hours when children are walking to/from school.
- n We do have one solar operated school flasher that works well.

### Various Sign Messages

- n “12-month school” sign to notify motorists of year-around schedule.
- n The state’s *Manual on Uniform Traffic Control Devices* has different signing than the federal *MUTCD*.
- n Place sign on top of R2-5C [SPEED ZONE AHEAD] sign.
- n In the past, we have restricted turning movements during school beginning/ending periods to reduce congestion/conflicts at crosswalks with NO LEFT TURN BETWEEN HOURS. . . The signs were produced by special order.
- n Truck exclusion signs with descriptive text on one panel.
- n Changeable speed limit sign (fiber optic) not specifically called out in *MUTCD* but falls within parameters.
- n At high volume school crossings, we do place four-way stops during school hours.
- n Solid-state time clocks with battery backup, specifically designed for a school signal.

### Experimental Colors

- n We are currently participating in the experimental phase of the strong yellow-green school advance and school crossing signs. (We hope to reserve this color of school issues only.) We are also experimenting with a 9-inch (in) x 9-in sign (in the shape of a standard S1-1) located at pedestrian signals that reads “KIDS LOOK LEFT-RIGHT-LEFT BEFORE CROSSING.”

- n Florescent yellow/green warning signs.
- n State DOT has just installed crosswalk signs with a neon yellow-green background instead of the usual yellow.

4. At school crosswalks, does your city (area) place traffic cones on the street, signs in the middle of the street, or use other temporarily placed traffic control devices to get the attention of passing drivers?

YES NO

IF YES, please describe what device(s) is used.

### People

- n Student Guards with orange flags.
- n (2 responses) Hand-held STOP signs.
- n Some use a hand-carried STOP sign, and some use a cone.
- n Use crossing guards at congested areas.
- n Activity at school crosswalks is controlled by crossing guards working through the county Police Department. All signs are installed . . . in conformance with state *MUTCD*.
- n Adult crossing guards use hand-held signs at some locations.
- n Crossing guards are used.

### Cones

- n Not in rural areas. Cones are used at some locations where children crossing guards are used.

- n Cones are placed at some locations where school safety patrols are present to define how far out into street patrol members may encroach if parked vehicles are nearby (thus restricting visibility).
- n Traffic cones are used in the street at crosswalk locations.
- n Two cities within the county utilize the orange traffic cones at adult school crossing guard locations.
- n Some use a hand-carried STOP sign, and some use a cone.
- n School personnel place unauthorized cones at crosswalks.
- n School patrol uses a cone to mark position of patrol members at end of parking area.
- n Allow schools to place cones in middle of street if street geometrics permit.
- n (4 responses) Traffic cones.

### Markings

- n Wavy lines approaching the school zone.

### Signs

- n S2-1 sign [pentagon school crosswalk].
- n Standard school crossing warning signs are used at all school crossings.
- n STOP sign at a few selected intersections; no mid-block.

### Portable or Temporary Signs

- n The state MUTCD prohibits temporary traffic control.

- n This is prohibited by state law. Some school districts still use this technique.
- n Use temporary STOP signs at three locations in the city.
- n Fold down STOP signs with hinge in the middle of sign.
- n Four-way stops during school hours.
- n We have a sign placed on a roll-out stand at one location with a speed zone indication. Also, we have placed a school crossing sign on a roll-out stand for one location without control devices.
- n Barricade mounted signs, flip-down signs, and crossing guards.
- n 36-in orange cones with 18 x 24-in sign on top—yellow, black, and white YIELD TO PEDESTRIANS IN CROSSWALKS—STATE LAW—\$100 FINE.
- n Temporary signs in the middle of the street at crosswalks (from both directions where crossing guards are present). Sign legend—SCHOOL CROSSING—signs placed and removed by crossing guards.
- n “Schoolboy Sammie” is a silhouette of schoolboy holding a sign reading SCHOOL CROSSWALK. Schoolboy Sammie may be used following a permanently mounted school crossing sign, but shall not be placed within the roadway. It shall only be used with a student patrol and shall only be in place during actual hours of school crossing.
- n Adult guards are issued hand-held STOP signs, should they choose to use them.

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PART C LOCALLY DEVELOPED WARRANTS AND PROCEDURES

- 5. See questionnaire, numeric answers given.
- 6. See questionnaire, numeric answers given.
- 7. Do you know of any study done by another city or group that can serve as an underlying basis for a procedure or warrant for school zone traffic control devices or adult crossing guards?

The responses included: American Automobile Association (AAA), Institute of Transportation Engineers, and a few state and local documents.

- 8. What studies need to be done or what warrants/procedures need to be developed so transportation engineers and planners can BETTER evaluate school zone traffic needs?

**Needed Community and Political Studies**

- n Need to take into consideration the social problems that we now face, i.e., kidnapping, both parents working, high concentration of traffic, people in a hurry, and lack of enforcement in school areas due to police on higher priority calls.
- n Need to study (1) what percentage of parents drive their children to school and relate that to the type of school (traditional, multi-track, magnet, etc.), (2) the busing requirements, and (3) the demographics of the population within a school's boundary to better project the traffic demands that will be placed on new schools and the streets surrounding them.
- n Need behavioral studies (by age) to better support decisions as to the need for pedestrian signals, crossing guards, and sidewalks. Also, more before-and-after studies related to various

types of speed control zones. I suspect some devices are "feel good solutions" that are largely ineffective. I would be careful about establishing any warrants before doing the above studies, since many of these decisions are political and relate to a community's wealth (e.g., guards).

- n We generally use the state *MUTCD* to evaluate school crossings. Often times there is no safety problem but the parents, children, and crossing guards are afraid. We need a means or method to deal with this problem. School speed limits don't slow traffic down!
- n The problems associated with school crossings are not related to the traffic control devices, but to both driver and student education.
- n Suggested input from "traffic safety committee" which is made up of traffic engineer, planner, school staff, PTA chairperson, etc. Committee chair should be a traffic engineer.
- n The procedure I feel that must be developed is the establishment of School Route Plans. While the traffic engineering community knows all about how to establish the route plan, the school administrators and the police departments have no idea what we traffic engineers are talking about. We must begin communicating with one another.
- n Take the school superintendent out of the motor vehicle code.

**Needed Site Layout and Traffic Operations Studies**

- n The process to improve the traffic requirements at a school site needs to begin during platting. The school board Facilities

Department needs to consult traffic engineers regarding the proper vehicular and pedestrian traffic pattern to a school site. On-site evaluations need to be made on a regular basis. During the evaluation we need to look at both the off-site and on-site conditions. Look for ways to improve the traffic flow by removing the excess vehicles from the public roadway by creating additional on-site stacking. Make sure that the walking/biking students have a safe way onto the school property without interacting with vehicular traffic.

- n Vehicle Code and state DOT manuals are geared towards pedestrian safety and traffic control on public streets. Studies, guidelines and policies geared towards traffic operations and controls in school parking lots and on streets adjacent to schools with respect to bus loading and parent pick up, etc. would be useful. Examples of good traffic patterns and regulations for these activities will help.
- n Bus/car/pedestrian school site guidelines and brochures to explain good design and good accommodations—particularly for existing schools.
- n Need the site design for the school's parking lots and access points to be more closely tied to the design of the surrounding streets rather than having school sites developed after surrounding streets are designed and/or constructed.
- n Each individual school needs their own study performed regarding school bus drop-off/pick-up activity, parent drop-off/pick-up activity, teacher/staff parking needs, etc. In addition, school input/cooperation has to be provided and included.

- n It is preferable for school loading/unloading areas to be off-street.
- n Increased cooperation between school administration and traffic engineers. Schools discharge too many students from exits that are incompatible with the street system.
- n Need good procedures for school site selection and transportation-needs planning (Michigan Section-ITE had a good report); also school route planning.
- n A Michigan ITE school site planning guide was prepared several years ago. I have referred to it and found it to be very helpful.
- n Need to get school architects (who design new school sites) and school administrators to appreciate the need to have a traffic engineer and the district's transportation supervisor provide input on the proposed school's circulation plan early in the design process.

### **Needed Speed-Related Studies**

- n Enforcement of "school zones" is a must. But how and who pays?
- n The effectiveness of school speed zoning has to be documented. The law currently allows the school district to request reductions as long as vehicle code criteria are met. This is unrealistic in most situations, but the traffic engineer is placed in a position that he must comply.
- n The effectiveness of existing school zone speeds and signs would be helpful.
- n Find out what will work to slow vehicles in school areas.

- n Need to study: (1) Is there a decrease in speed of vehicles passing through school zone; do motorists recognize school speed zones or ignore them? (2) How much above speed limit do motorists travel through school speed zones? (3) Does police enforcement help to force long-term compliance with school speed zones?
- n Need universal warrants for establishing speed reductions at signalized intersections. Consistent speed limits for same.
- n Safest crossing protection and proper speed reduction.
- n One problem we have wrestled with is when it is appropriate to install a 25-mph school zone on an arterial in front of a school site. If a pedestrian crosswalk is needed, we of course reduce the speed. But what about some private schools or suburban high schools where virtually all students are brought by car or bus, and pedestrians are not the issue? Other driver safety issues are being claimed.

**Needed Local, Site-Specific Studies**

- n Gap studies.
- n Gap studies. Speed and volume of motorist and pedestrians.
- n Pedestrian studies need to be done and revised yearly based on changes in student destinations.
- n On-site evaluations when children are present, speed surveys, and warrants evaluations for signs, signals, and flashers.

- n Location of school, what grade (ages of students), 85 percentile speed, accident history for last three years, vehicle volume counts, pedestrian counts, and adequate signs and markings.
- n Assess and weigh various data such as the number of pedestrians, traffic volumes, lanes, number of cyclists, number of school buses, etc., to determine the location and number of school crossing guards, pedestrian signals, and overhead flashers. Due to funding constraints all locations need to be prioritized. Need to eliminate “politics” from any decisions.
- n The number of pedestrian children attending school; volume and speed of traffic.
- n Speed studies to determine how much control is needed.
- n Field studies to determine vehicle/pedestrian conflict areas.
- n Identify the number of vehicle/pedestrian conflict at school crossings, speed surveys, pedestrian origin-and-destination studies.
- n We are currently inventorying school zones to determine needs, and will implement new signing and pavement markings accordingly. We also want school district to standardize operation times.
- n Work with school transportation staff to determine school walker boundaries and anticipated pedestrian volumes and routes.
- n Each school zone is unique, making it hard to identify one particular study that would benefit all traffic needs. City or county organizations work with this more closely than the state.

### Needed Warrants—General Comments

- n The warrants that exist must be followed by everyone for uniformity.
- n Utilize the state technology transfer center in developing warrants/procedures we could use.
- n Studies need to be conducted to determine what devices work on motorists to bring their attention/awareness of the school area.
- n Studies: speed, gaps, roadway classification, demographic studies (number of latch-key children), percentage of students transported by bus and vehicle compared with percent of walking students, location of school (urban, rural, suburban, small town, etc). Instead of warrants, have a matrix or series of calculations to produce an outcome that could be related to a particular device or system.
- n Clarify when flashing beacons with reduced 20–25 mph speed limits can be placed in lieu of other devices (i.e., crossing guards, etc.). Also provide information on accident history at school crossings with different control devices.
- n Need to reexamine *MUTCD* warrants and “threshold” numbers (pedestrians), and modify them as the studies indicate. I suspect urban conditions should have pedestrian counts lowered so that the warrants are met sooner.
- n Warrants for reduced speed zones and warrants for adult guards.
- n Warrants for crossing guards, reduced speed zones, and pedestrian signals.
- n We need warrants for school zones, school traffic control devices, and adult crossing guards.
- n What number of crossing students warrant flashing school zones and traffic signals.
- n Roll-out STOP signs need to be eliminated statewide. Warrants for crossing volumes, pedestrians, and vehicles.
- n Establish pedestrian and traffic volume criteria to be used when evaluating a location for special traffic control devices.
- n I suppose something similar to signal warrants in *MUTCD*. Consider such things as: number of children, traffic volumes, approach traffic speed, and on-street parking near school.
- n An applicability study to evaluate the effectiveness of the various procedures being used and the development of an easy to use computer program to rank and prioritize school traffic control system-wide for a city.
- n A finite set of warrants would be nice. They should be strong enough to be convincing to politicians and emotional parents, but realistic enough to recognize these factors.
- n Warrants: School crossing protection—school patrol vs. adult guard vs. signal/stop. Compilation of studies on effectiveness of school traffic controls. Update of FHWA 1970s study of driver and child perception of school traffic controls.
- n Develop warrants by assessing pedestrian, accident, road classification, pedestrian age, and density/volume of traffic.

### **Needed Warrants for Crossings and Crossing Guards**

- n Proximity of crosswalks on major thoroughfares. We have a mid-block crosswalk that seems to create as many problems as it may solve.
- n Establish “guideline” criteria for available safe gaps vs. number of crossing, age, and approach speed.
- n Warrant or measure that consists of number of kids crossing, daily volume, width of street, speed limit, and type of traffic control.
- n I would like to see a comprehensive study of marked crosswalks in terms of accidents and safety, especially near schools or with those crossings that have yellow crosswalks.
- n Universally applied procedure for when to use crossing guards.
- n Warrants for adult crossing guard, warrants for school crosswalk: develop a procedure for determining these warrants.
- n Clearer warrants for school crossings—the different levels, signed, manned, and traffic signals.
- n Specifically study where guards are really needed.
- n Warrants for crossing guards, guidelines for pedestrian gaps at crossing. Update gap study concept. Refine ITE recommended practice. Standardize placement of signs to minimize number of advance signs.

- n I believe some warrants would be beneficial for school crossing guards. Studies need to include gap studies, conflict analysis, accident analysis, and maybe some kind of exposure factors.
- n Warrants for installation of beacons, guidelines for crosswalk design, better guidelines/justification for crossing guards.

### **Needed Warrants for Signals, Flashers, Beacons**

- n Establish criteria for the use of flashers for speed limits in school zones.
- n Studies to determine need for school flashers: some minimum criteria are needed, but it is hard to argue child safety issues with parents. We try to make the school responsible for guiding/funneling children to specific locations for crossings or to existing signalized intersections.
- n Need to better define the warrant for traffic signals near schools. Signals can be detrimental because they provide a false sense of safety to kids. Also, all traffic must stop at STOP signs.
- n Warrants and guidelines for school zones on major streets. Evaluate moment for pedestrian signal.

### **Needed Warrants for Signs**

- n To see what works best, develop studies of specific type of accident history in school areas under various types of control. Consider more use of stop control in school areas, especially four-way stop control. Develop information to educate school personnel and parents about best types of school area traffic control.
- n Warrants for STOP signs adjacent to schools.

## Other Study Needs

- n The Police Department commented that they are satisfied with the current ITE procedure.
  - n *MUTCD* pretty much covers it.
  - n State *MUTCD*.
  - n Defined by state manual.
  - n Probably no need to reinvent wheel. There are existing successful procedures.
  - n Currently the city is utilizing its own council policy for school pedestrian safety in conjunction with the state manual.
  - n Gather empirical data and perform regression analysis.
  - n School-related regulations (turn-on-red prohibitions, parking restrictions, school speeds) are in effect on school days. They require the public to know or assume the schools' schedules.
  - n The state law states the school speeds are in effect on those days between the hours of 7:00 a.m. and 6:00 p.m. Do these hours reflect the times of school activities, or are they arbitrarily established to cover all schools, all activities?
9. Briefly describe any transportation planning or engineering concepts/solutions your city (area) has developed for improving traffic safety, circulation, and access at existing school sites. Include any effective strategies for reducing the number of vehicular trips at or near school sites.

## Community and Political Concepts

- n Schedule regular meetings with traffic engineer, school administration, representative from local school, and Police Department to work on problems together.
- n City does meet regularly with a committee of representatives from each school to discuss traffic safety issues.
- n The city has a task force comprised of representatives from Traffic Engineering, the Police Department (safety patrol advisor), public works (signing and striping supervisor), and the school district. This task force surveys the elementary schools to evaluate traffic safety issues and to make recommendations to each represented agency for resolving any traffic problems that occur at the schools.
- n We have a committee that deals with school safety issues only. It is comprised of School Safety Office, Police Department, state DOT, and Traffic Engineering Division Traffic Engineer Choice Committee. Very effective!
- n The school district has become much more attuned to the advantages of involving the city's traffic engineering staff in the planning process rather than the corrective process "after the fact."
- n Videotaping school traffic with speed displayed, then show the video at the PTO meeting and let peer pressure reduce speed.
- n Distribute pamphlets, "Parents can be Serious Traffic Hazards" by AAA.

- n The transportation planning engineer works with school representatives during school planning stages, but they are not required to follow our requirements. The local school board is exempt from transportation regulations.
- n Traffic Engineering School Safety Coordinator works very closely with the Safety Department at the school board. On-site evaluations of traffic patterns are conducted on a daily basis. Each school site is unique; therefore, the recommendations are different at each location. Some changes are minor in nature, requiring only additional signs. Other changes may require extensive physical reconstruction of the driveways and/or parking lots. School-based Parent Safety Meetings are attended regularly to review any safety concerns. Carpooling is recommended. During these meetings it is suggested to walk their child to school to avoid the traffic problems. This also gives both the parent and student additional time together as well as improving their physical health. Traffic flow patterns (maps) are distributed to each parent, encouraging their cooperation.
- n To increase bus ridership and walk/biking to school, we are currently going through a process with a local elementary school, combining parent education in bus safety and child education on safety.
- n Working with police, PTSA, and school to consolidate places children are crossing to one location staffed by a crossing guard.
- n The City Traffic Division, School Transportation Department, and City Traffic Commission have been working together on school-related traffic issues to improve existing school sites (such as upgrade existing signs, use/train crossing guard, increase number of buses, etc.). Schools need to address the problems of school bus ridership.
- n Provide safe school route maps to the walkers.
- n Developed school safety manual with help of lay advisory committee organized by school district. The manual included “safe walking routes” for each school, which assists greatly in establishing sidewalks, school zones, etc.
- n Meet with school district and principals for site-specific needs. Encourage carpooling, older students to walk, develop safe walking routes, effective placement of control devices including crosswalks to encourage proper pedestrian routes and safety, and publish information in newsletters.
- n Unfortunately, state highways are major through routes and there is not much one can do to reduce traffic volumes. However, we have asked the state patrol for more enforcement.
- n Prepared a crossing guard evaluation process brochure for schools.
- n Most of our trips are generated by parents. They are the root of our school congestion: anti-social actions.
- n Most, if not all, traffic around schools at crossing times is parental traffic.
- n There is another side of this issue that needs to be addressed—THE PARENT! In spite of what we do as transportation professionals to enhance school site traffic flow (i.e., parking restrictions or placement of crosswalks with a crossing guard), many parents simply do not follow the guidelines as set forth by school officials. Many schools are struggling with how

to “educate” parents in the appropriate method to transport their children to/from school. Several school principals have stated that many parents do not understand that safety policies are set for all children’s safety at school. Instead, these parents become focused only on their child as they make sure it is their child with the shortest walk from car door to school door.

### **Traffic Demand Management**

- n The city has instigated a bicycle master plan containing many bike paths that lead to schools from residential areas.
- n Walk/bike maps.
- n Staggered drop-off times.
- n Staggered school start times, parent/teacher escort service to classes.
- n Schools could implement car-pool or ride-share programs. One street in our city has two schools located adjacent to each other. School start and end times were staggered to reduce traffic volumes (spikes).
- n Not realistic as the parent drop off/pick up (a growing trend), but have the PTA encourage carpooling.
- n Encourage controlling the dismissal location of students. (Parents desiring to pick up children will park close to where the children are exiting the school grounds.)
- n We have established parking restrictions in appropriate areas to have vehicles park in areas to which schoolchildren can be safely directed.

- n Under the old scenario of neighborhood schools with lots of pedestrians and few cars, we prohibited parking on the school side of the street and allowed unlimited parking on the opposite side. Now with many cars and relatively few pedestrians, we are changing to 2-hour parking between 8:00 a.m. and 4:00 p.m. on school days on the school side of the street, and no parking between 8:00 a.m. and 4:00 p.m. on school days on the opposite side. (Our streets are mostly 26-ft wide.)
- n Restricting main street side of school from curb parking during school session. All buses have designated drop-off area. All parents have designated drop-off area.

### **Site Layout and Traffic Operations**

- n Vehicle trips have increased for various reasons (after-school activities, fear of abductions, overprotective parents, etc). Demand reduction strategies such as attempting to establish more carpools have been unsuccessful. Most school lots were only designed for staff and some visitors, so parents clog the streets and create potentially dangerous conditions. In most cases, our response has been limited to parking restrictions, but enforcement is weak. Where physical reconstruction is possible, we attempt to isolate bus driveways from parent traffic. Other engineering solutions appear limited, as schools are mini-versions of special events such as sport or concert areas (demand vs. convenient supply).
- n Much more involvement/scrutiny in site plan development. School officials must understand that the school should be designed to accommodate all bus and parent pick-up/drop-off traffic ON-SITE.

- n We have tried in the past to advise schools of better circulation plans for pick up and delivery of children.
- n Redesign school parking lots to improve flow, minimize pedestrian-vehicle conflicts and provide a drop-off area.
- n We have plans for sidewalks, have developed storage lanes for motorists waiting to pick up children, have recommended changes in vehicle and pedestrian patterns.
- n At the newer elementary schools, designated drop-off points are established with defined directional signing and pavement markings.
- n Traffic studies for elementary and middle schools suggesting signs of loading zones for different ages.
- n Turnouts at drop-off areas, designated drop-off areas.
- n Parking and loading zones.
- n For new schools, we attempt to provide off-street bus loops, separate recessed parking areas for parents to drop off/pick up their children.
- n Look for ways to separate conflicts between bus loading areas and parent pick-up/drop-off areas.
- n Keep buses off city streets by means of unloading areas, etc.
- n When a school is being expanded or built, the city traffic engineer's office works with the school board administration to develop a plan to segregate the flow of bus and parent drop-off/pick-up circulation as much as possible.
- n We have looked at all schools and determined the best areas for bus loading/unloading and tried to minimize conflicts between kids and cars.
- n When possible, encourage and provide for on-site (off-street) drop off/pick up by school bus activity and parent activity. When possible, separate by street the school bus drop-off/pick-up activity from the growing parent drop-off/pick-up activity.
- n Designate separate loading and unloading areas for school buses and parents.
- n Separation of bus/pick-up/parking/pedestrian areas is desirable.
- n Recommend closing secondary school exits to concentrate students at a safer crossing location.
- n Eliminate on-street parking in subdivisions adjacent to school walkways so children do not have to step out into the street and look around parked cars. Also restrict the placement of cluster mailboxes that impede the sight of young pedestrians.
- n Prohibition of left or right turns exiting school site, which previously created numerous conflicts with school pedestrian crossing.
- n We have installed traffic signals at school exits and redesigned on-site circulation to channel buses to these exits.
- n Pedestrian-only phases for traffic signals. No parking zones on opposite side of street from school so children are not crossing between cars.

- n As part of the city's traffic calming efforts, funds have been allocated to enhance pedestrian safety in the vicinity of elementary schools. These efforts focus on speed reduction near crossings (primarily through the use of speed bumps) and enhancements to crossing (curb extensions, median islands, etc.).
- n One-way streets.
- n Due to the increase in number of children brought to school by car, many streets are one-way during school opening and closing hours to reduce congestion.
- n One-way system for buses.
- n One-way flow around the school certain times during the day.
- n Established one-way operation for two schools that use on-street loading/unloading. The street block is signed ONE-WAY/DO NOT ENTER WHEN FLASHING during school starting and dismissal periods only.
- n City has several locations where one-way streets are either closed to auto traffic or made one-way, except for school buses. These actions are needed to facilitate right-side loading of buses, which would not be possible otherwise.
- n One-way traffic for passenger side drop off.
- n One-way streets during school hours, review of fire lane placement keeping vehicles away from school, developed signed and lined school bus loading areas, no parking during school hours around buildings.

- n In some instances, one-way traffic patterns can be designed to accommodate pick-up and drop-off traffic so as to concentrate the traffic into simpler patterns.

### **Traffic Control Devices**

- n Several years ago, the city council directed the department to install all-way STOP signs at most intersections adjacent to all elementary and middle schools (both public and private) in the city. Many did not meet any of the existing warrants for all-way stop control. One positive aspect has been a substantial reduction in requests for all-way STOP signs adjacent to schools.
- n Currently experimenting with "basket weave" STOP signs.
- n We did come up with a new sign, NO TURN ON RED WHEN PEDESTRIANS ARE PRESENT. They are fairly effective at crossings where school children are present, and more effective than signs that prohibit NTOR during school hours. Our sign covers any situation that a pedestrian is present.
- n We are developing a white-on-blue sign to be placed at the beginning of school zones that will say ENTERING SCHOOL ZONE, ENHANCED ENFORCEMENT AREA. The police are to provide enhanced enforcement.
- n All public elementary schools are provided signs on roads adjacent to schools. Some middle and senior high schools have zones if they are located on an arterial. Private schools are provided signs if there are any students walking or riding bikes to school.

- n Use of bus insets, coordination of WHEN FLASHING times with special busing situations, radio-controlled flashing beacon system, and use of mid-block signals where possible.
- n Use of flashing beacons, “zebra” striping of crosswalks, change out to high intensity signing.
- n We plan to place overhead flashing signals to designate all 20-mph school zones. We are also seeking legislative action to change the current state laws to include a 20-mph SPEED WHEN FLASHING. Present law only allows 20 mph WHEN CHILDREN ARE PRESENT.

**Other**

- n County has a SPIS (Safety Priority Indexing System) that identifies all accident locations that could be problematic.
- n Annual school review.
- n This is dealt with on a city or county level. The state does not have any specific plans or solutions for improving traffic conditions at school sites: each location is unique.
- n None—no staff time.

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**PART D SITE DESIGN AND POLICY**

- 10. See questionnaire, numeric answers given.
- 11. See questionnaire, numeric answers given.
- 12. What design (or policy) methods or techniques have been used in your city (area) to separate school pedestrians from vehicles both on and off the school site?

**Pedestrian Routing**

- n The state department of transportation and the school districts developed a comprehensive “Safest Routes to School” maps program in the mid-1970s. These maps designate routes to and from each elementary and middle school in the district, which provide for the greatest amount of safety. Recommended crossing of major streets, for example, are at signalized or crossing guard controlled intersections.
- n Suggested routes to school, informational flyers, newspaper articles, encourage designated drop-off areas, and encourage escort service from cars.
- n Produced suggested route to school maps to aid parents in selecting the route their child takes to school.
- n Designate a school route.
- n Designation of school routes for pedestrians. These routes are designed to use streets with proper sidewalks. These routes are designed in conjunction with school administrators.
- n Signing, identified school route.
- n Pedestrian safety plan.

**Crossing Guards and Traffic Control Devices**

- n Crossing guards as determined by school district.
- n Crossing guards at major intersections.
- n Using a school crossing guard.
- n Strategic placement of school crosswalks and safety patrols.

- n Crosswalks, signs, and police crossing guards.
- n School crossing, crossing guards, and pedestrian signals at cross streets.
- n The city has used traffic control/school crossing guards that reduce conflicts between pedestrians and vehicles.
- n Pedestrian crossings, pedestrian signals, crosswalks, and stop bars.
- n Use of pedestrian actuated signal (although only one new one in 15 years).
- n Pedestrian-only phases at traffic signals. Cars pick up children on school side of street only.
- n Some red signals.
- n School signals activated by pedestrian push button.
- n Adequate signs and markings.
- n Parking is prohibited during school hours within 100 ft of each school crosswalk. The village developed this parking standard to ensure a crossing guard's ability to see on-coming traffic. With more parents driving larger passenger vans and their constant desire to park in the closest available parking area, the village's guards were unable to see the vehicular traffic from curbside. Another benefit of this 100-ft standard of no parking on each side of the crosswalk is the ease of enforcement by the Police Department. Previously, each school site had its own particular parking restriction, so the police officer had to make sure he was writing the proper parking ticket with appropriate ordinance. Now each school is the same.

- n NO PARKING OR STANDING signs on opposite side of street to school.
- n No parking zones, limited parking hours, and "school bus only" drop offs.

### **Sidewalks and Other Physical Separations**

- n Nothing special, just regular curbs and sidewalks.
- n Request sidewalks adjacent to schools. Often the school district does not want to build a sidewalk, claiming no students walk to school. Also, make suggestions regarding site plan.
- n Work with developers to incorporate sidewalks away from schools (i.e., through the end of cul-de-sacs) directly to school property.
- n Sidewalk placement.
- n Sidewalks and curbs are used wherever possible.
- n Have constructed decomposed granite walkways.
- n Off-site sidewalks.
- n Mostly sidewalks. We have a pedestrian program that has included paved shoulders in rural areas.
- n Sidewalks, buses, overpasses, etc.
- n Tried to place sidewalks along pedestrian routes to school.
- n Sidewalks and bike paths.
- n Sidewalk construction.
- n Sidewalks.

- n Use of sidewalks in urban areas and busing in rural areas.
- n Sidewalks as a part of all new street construction near schools; school flasher program.
- n The county encourages the placement of sidewalks. This sounds basic; however, we have several townships that do not have subdivision sidewalks, and it seems there is a constant cry from these areas for STOP signs, school signs, etc.
- n Sidewalks, overpass on arterial street, landscaping standards between curb and sidewalk.
- n The state does not deal specifically with school pedestrians, but on high speed facilities with walkways, a two-ft separation, such as a planting strip, can be used between roadway and walk.
- n Handrails or guardrails where needed.
- n The school district uses fenced-in holding areas for elementary school pedestrians being picked up by parents.
- n Corrals in parking lots, pedestrian paths, fence.
- n On-site fencing to control points where pedestrians cross from school to parking lot.
- n Construct sidewalks and pedestrian footbridges.
- n A few overhead or underground walkways.
- n Pedestrian overpass.
- n Pedestrian bridge overcrossing.

- n Pedestrian overpasses.
- n Elevated walkways.

### **Site Layout and Traffic Operations**

- n Just site design efforts—no specific policy.
- n Locations of parking lots, bus loading and unloading, and driveways are best attempt.
- n Each site is unique. When reviewing a specific location several issues must be addressed: pedestrian traffic (to include bike riders), parent drop-off area, bus drop-off area, and crossing guard locations around the school site. Sidewalks are constructed around each driveway to allow safe walking and biking students. The maximum amount of on-site stacking of vehicles is recommended. Separation of the drop-off area and parking lot is ideal. Buses are separated from parents. Off-site recommendations would include extended turn lanes and/or turning restrictions. Pedestrian signals or full traffic signals when warranted.
- n Designated drop-off areas, areas which are coned off, and close streets or areas during a.m. or p.m. hours.
- n Try and keep pick-up points on school property.
- n On-site: plan calculation and bus pick-up points. Off-site: add sidewalks to school zones.
- n Separating pick-up areas from school routes, work with schools on where children are discharged.
- n Separate loading areas.
- n Bus loading/unloading on-site, with parent pick-up/drop-off site.

- n Buses load students on school property, not at curb.
- n Pull-off area for buses at some schools.
- n Incorporate separate bus and parent pick up/drop off into design.
- n Separate bus staging and parent pick-up areas.
- n Encourage bus loops or other means of separating bus pick-up from parent pick-up areas.
- n Separate areas for bus and parent loading.
- n Some schools segregate parking from bus loading area.
- n On-site (not on-street) school bus pick-up/drop-off area, and on-site (not on-street) parent pick-up/drop-off area.
- n Separate buses from single occupant vehicles.
- n Where possible, to design (or redesign) the campus to segregate the passenger cars from the bus routes and minimize the crossing flows existing or entering the school site.
- n One-way driveways for buses only. “Walkers” use different school exit than children taking buses. Dropping off and picking up of children must be done off the school site in a designated area away from school crosswalks, but with access to these crosswalks.
- n Sidewalks that do not cross, or minimize crossing.
- n Walkways—separated from parking/driveways.

- n Minimize sidewalk crossing on entrances and internal driveways.
- n Off-street walking paths, sidewalk systems that avoid major traffic flows to school site, proper use of signals and guards to create gaps for safe crossing, and taxi service during construction project.
- n The city has instigated a bike path system containing many bike paths that lead to schools.
- n The use of one-way streets at some school sites.
- n Some mid-lot subdivision sidewalks and trails.

### **Transportation Demand Management**

- n Busing.
- n Stagger dismissal times to have children riding buses leave earlier or later than walkers do. Separate the bus area from the parent area and away from areas/accesses the walkers are using.
- n Use of mini-bus route to reduce number of school pedestrians.
- n Sidewalk installation along streets and safety busing—bus picks up children who would otherwise have to cross busy or “unsafe” streets.

13. At new school sites in your city (area), describe any transportation planning and engineering concepts, policies, and/or procedures that affect the selection of a new neighborhood school site to ensure that safety and good traffic flow are maintained.

### **Policy that Recognize Functional Class**

- n Not locating elementary schools on arterial or collector streets.

- n The last site was selected specifically because it was not on an arterial street, and had effective collector street circulation. . . . Sidewalk systems, signals were planned based on attendance boundary information and school district input.
- n Normally located on collector street within a residential area.
- n Districts try to locate elementary and middle schools on local residential or residential collector streets, but availability and cost of land sometimes dictate site selection.
- n The county must grant an access permit for access to the county highway system. This access permit can and does provide a review by the traffic engineering section of the plans.
- n We do not have say in site selection that is unique to cities, counties, and citizen groups. To maintain good traffic flow in other situations, DOT employs access management techniques. We try to reduce the number of accesses to a road to reduce the number of conflicts. We also consider raised medians in some cases to reduce crossing distance for pedestrians and further reduce points of conflict in the roadway.

**Traffic Engineering Review is Required**

- n Our zoning regulations classify schools as “Special Uses.” We have not had a new school built since the 1960s, so these regulations have not been put into practice. In theory, the City Engineer would have input during process.
- n Sites are normally set aside during the development phase. There is input during the development review.

- n Being included during the selection process helps to ensure the proper traffic flow.
- n A team was compiled to review possible sites for purchase. We also review site plans through the Development Review Process.
- n Requiring a traffic impact analysis plus locating elementary schools away from major streets.
- n No “new” sites in many years. However, such sites would be required to submit a site plan for traffic engineer’s review.
- n All traffic issues must be approved by the Traffic Coordinating Board (TCB) at the city. The TCB is comprised of public works, police, fire, and engineering personnel.
- n School site selection committee process.
- n When development in an area is being planned and when improvements are being designed, traffic engineering makes comments and places requirements on the development as part of the city’s review process. Traffic Engineering also approves and/or installs signing and striping in the school area after the school is constructed and before it opens.
- n Typically, a comprehensive investigation is conducted of the surrounding streets (whether old or new school). Appropriate warning and regulatory signs and pavement markings are installed or maintained.
- n Primarily, just the basic premise that adjacent roadways can accommodate the impacts of school traffic through residential areas is a big consideration.

### Little or No Traffic Engineering Input

- n The city has little control over school sites since the state issues permits for schools. The school district does invite the city's review and comment but it is not binding.
- n Water lines and sewer hookups are the only things we verify before granting permission. The school board designs the layout for school and we will make recommendations.
- n There are no written standards. We take each on a case-by-case basis. Typically, the school district picks the site without much traffic input because they are looking for a good deal on property.
- n School sites are usually selected by school board. Newer schools include adequate off-street parking and loading areas.
- n None—controlled by school.
- n Per the discretion of the school board.
- n Site selection process involves only the county school board.
- n The county is not involved in school site selection.
- n City not involved in this process.
- n We (city) are often not asked until it is too late.
- n New school sites are exempt from Site Plan Review Process, causing problems after-the-fact from site access design and location deficiencies. Local government is left with the cost of very limited traffic mitigation possibilities.

### Other

- n General planning practices.
- n Avoiding exits that encourage jaywalking.
- n Set aside parking for parents, school bus drop-off/pick-up areas, parking restrictions.
- n Sight distance at intersections, driveways, and size of site—to accommodate buses, parent drop offs, etc.
- n Pedestrian Safety Plan.
- n Sidewalk planning.
- n Sidewalk connectivity.
- n Traffic signal included in one new school project.
- n Unfortunately, busing and integration are major factors that tend to work against the neighborhood school concept.
- n Variations of “no new sites for many years.”
- n A few replied new schools were not being built in their area.

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### PART E INSTITUTION/ORGANIZATION

14. Identify organizational arrangements/practices (such as cooperation between city government and independent school board) that are conducive to finding or implementing effective school traffic solutions.

### **Get Input During Development Stage**

- n There should be an agreement between school districts and county to jointly and cooperatively work together on selecting and developing a school site.
- n Open discussion meetings are conducted to show concern and/or desires for the new schools.
- n A mutually selected site that provides for the benefit of the school district, city, and school children, with joint city and school district planning prior to site selection.
- n Coordination of site design before construction.
- n Site plan review process that involves city staff on a "Building Plan Review Committee."
- n Currently, school site plans are submitted to Development Services for plan checking. This does include review by a traffic engineer.
- n Require review and approval of traffic flow by local agency prior to construction of any school site. Also, need some control of each school principal by school board to keep them from operating each school as their own fiefdom, resulting in bad traffic engineering as they close driveways and revise circulation and dump pedestrian/vehicle conflicts onto local streets.
- n Plan review by local agency of new or proposed changes at school sites for roadway improvements on-site and off-site.

- n The city Traffic Engineer has offered to review plans. The school board has been receptive in light of a recent controversy involving construction of an elementary school next to a 50-mph suburban arterial.

### **Interaction at High Levels**

- n We work with local school districts on bus routes, crossing, signing and marking, traffic signal timing, access to school properties, and parking at and near schools.
- n Working with the county Superintendent of Schools, our bureau personnel have the opportunity to meet with all municipal school superintendents at their monthly meetings.
- n Formation of a school district-wide Traffic Safety Committee (chaired by the superintendent or assistant superintendent) that meets on a regular basis (very beneficial).
- n Joint city council/board of education committee meetings.
- n Schedule joint meeting of city council and school board.
- n There is a joint school district/city/law enforcement agency School Safety Committee. There are joint school board/city council meetings. School district has representation on city's Traffic Commission. Cooperation exists at staff level.
- n No new traffic plan is implemented adjacent to a school without input from the school board and/or school staff. We also use town and county resources to re-design on-site parking areas for approval by the school, at no cost to the school.

- n Voter-elected school boards tend to be cooperative.
- n Good relationship between the city government and the school board.
- n Working together in small committees, which include representation from the district board, the school administration, the parent/teacher group, the neighborhood group, and affected agencies (traffic, transportation, emergency services, transit, etc.).
- n The city School Safety Advisory Committee meets monthly to discuss any school problems. Involves city, state, local police, school board, etc.

#### **Interaction with Law Enforcement**

- n Our Traffic Engineering Office works closely with the Police Department regarding school problems. This arrangement works well.
- n Work closely with the County Sheriff and their school safety officer.
- n Good coordination between transportation engineers/planners and the Police Department.
- n Effective communication between the Police Department-School Patrol Division and the city Traffic Engineer's office.
- n Traffic engineering and police have an excellent working relationship.

#### **Interaction at Lower Levels**

- n We have informal, but generally good, working relationships among traffic engineering, school board transportation staff, and the police. When necessary, meetings are held with parents, residents, and school administrators.

Traffic engineer can quickly implement parking changes without town council approval or special ordinances, as some other cities require.

- n Roundtable discussions—When the village was evaluating the school crosswalks, speed zones, and fire lanes, we asked various departments to attend these meetings. This allowed all to see how each other's jobs were dependent on each other. Thus, the Engineering Department developed the signs properly, the Police Department could legally enforce the signs, and the school district could work with the parents to learn where to park and walk for their student children. Each department had clear understanding of their role in this project.
- n The school has to have/designate only one voice, such as the Administration Office; otherwise, teachers, parents, school board may all disagree on an item. Include the Police Traffic Safety Coordinator with solutions reached. Correspond with them, meet one school representative and be consistent from school to school.
- n The city has an Elementary School Traffic Safety task force comprised of representatives from the school district, police, and traffic engineering. This task force surveys each elementary school each year (or when requested by a school) to evaluate and make recommendations for resolving any traffic safety issues that arise at the schools.
- n Develop a good working relationship with one member of the school district.
- n Village Traffic Advisory boards that include a representative of the local school administration, not the school board, as well as the local police and public works departments.

- n Meetings held with school district personnel about problems in and around schools.
- n There is communication/contact between school districts and the town's Traffic Safety Department. If approved, we will provide services to the school district on charge-back basis.
- n There are good relations and cooperation between individual schools, school board, and the city. The Adult Guard program is a joint effort among city and public and private school systems. We work closely with the schools in establishing crosswalks, adult guard locations, parking restrictions, traffic control devices, etc.
- n Problems are investigated on a case-by-case basis, normally after request by the principal. Interaction with school boards has not been initiated.
- n Work directly with independent school principal and apply the same warrants as we would for the public schools, PTA, and PTO.
- n Traffic engineer works with transportation coordinator for school department—ongoing.
- n City and school district.
- n Working with school administration teams and similar personnel that are familiar with the problems and concerns of a school area.
- n The city traffic engineer visits the elementary school principal once a year, late summer or early fall, to discuss traffic safety around schools.
- n Traffic Committee has school representation.
- n The Department of Transportation works closely with the school district safety section. Meetings are held on a regular basis with staff from both agencies to discuss specific problems at specific schools.
- n The Traffic Design Engineer from the city meets monthly with the school board's Safety Committee to resolve traffic safety issues. This meeting is sponsored by AAA.
- n Lay advisory committees for various issues.
- n School committee is part of town government; therefore, we work together.
- n This state DOT cannot speak for school traffic solutions, but for general traffic solutions, Town Hall-type meetings can be helpful in getting everyone on the same track and giving everyone all available information about problems and possible solutions.
- n City School Safety Committee meets 3–4 times per year. Staff members from city and districts work together OK.
- n The city attempts to address school concerns individually. Although this has been a reactive process, it has been somewhat successful.
- n The city traffic engineers sit on a School Safety Committee to discuss and act on school traffic safety issues. Other members are the Automobile Club (AAA), city Police Department, and the public and parochial schools.
- n Cooperation between school administrative personnel and traffic engineering personnel. Include surrounding neighbors in meetings, correspondence, etc.

- n A Parent Safety Committee was created in 1983 that meets once a month throughout the calendar year. It includes the following agencies: county school board Safety Department, county Traffic Engineering Division, state Department of Transportation Traffic Operations, municipality Police Departments when specific issues in their jurisdiction are addressed, parent advisory representatives from . . . areas, and any other agency with concerns. Also, a working relationship between the county Traffic Engineering Division School Safety Coordinator and the school board Safety Department and Facilities Department.
- n We have a pedestrian traffic safety committee that meets to discuss all issues dealing with the schools. Members are from each school and from PTO's.
- n Meetings between the school principal, PTA, city police, and city traffic coordinator.
- n Educate parents as to where they can and cannot drop off students and enforce this.
- n Schools conduct surveys of students/parents of traffic safety issues to be presented to the city. City reviews areas of major concern to develop possible solutions.
- n School safety committee meets monthly to resolve concerns/issues. Committee consists of school representative, police, traffic engineer, citizens, and city council member.
- n Traffic Safety Committee (PTA, traffic, police, busing, etc.), good working relationship with school administration and police.

- n The city has identified the responsibility of parents, school principal, traffic engineer, police, etc., in regard to school crossing safety measures.
- n Cooperation of school staff, police, and engineering.
- n Openness to jointly discussing specific problems, and willingness to share in the cost of school traffic improvements on the public road.
- n Crossing Guard Committee comprised of school district public safety director, community services police sergeant, and traffic engineer.
- n A subcommittee of the City Traffic Commission for school crossing guards.
- n Traffic Safety Teams that incorporate the 4 E's.
- n We have occasional staff level meetings to work on specific concerns as they arise.
- n Establish guidelines/warrants.
- n Good working relationship with school safety officials.
- n Regular contact.
- n Traffic Safety Board.

**Specific Actions**

- n We did work on school route plans with the principals of each grade school.
- n Develop walk/bike maps with cooperation of school.
- n School route plans.

15. Identify organizational arrangements/practices that are **detrimental** to finding or implementing effective school traffic solutions.

### **Failure to Get Input During Development Stage**

- n Selection of a school site without city engineering/planning input.
- n Non-involvement of city staff in early stages of site selection/design.
- n Lack of proper city involvement in site selection and site design.
- n School districts, as a state district, are not bound to the city's development process.
- n The current practice of choosing school sites without a traffic impact analysis, particularly middle and elementary schools. Exempting the school board from transportation requirements.
- n New schools can be constructed without any input from county or Regional Planning Commission.
- n School district is a separate agency and serves several cities. For financial reasons, school district prefers large undeveloped sites, which are usually on major roadways, rather than neighborhood sites.
- n School buys site, then tries to ramrod through county and fights all on- and off-site improvements.
- n Failing to purchase "desirable" school sites before they become house sites.

- n By state law, school districts are EXEMPT from review by local agencies (causes all kinds of circulation problems later dumped on locals who now have few options to correct poor design and location).
- n City's involvement usually begins after the school site has been selected by the school district. Actions are usually reactive, not proactive.
- n Our local government has no leverage over school board since they are a state agency. While we require them to provide a traffic study and signs, striping, signalization, etc. as needed, they rarely do.
- n Each school district is independent and generally does not look for input concerning traffic problems.
- n County school board feels that they are "exempt" from being required to implement suggestions involving on-site traffic issues.
- n Schools are county schools and do not implement any traffic solutions suggested by city.
- n We do not plan ahead of time because the school district does not need our approval to do anything. We usually end up trying to find a solution once the problem is present.
- n State school statutes, which govern schools, need to be reviewed.

### **Political or Other Non-expert Actions**

- n Policy decisions by city council in lieu of using accepted administrative standards.
- n City council doing their own solution and not taking staff and community recommendations.

- n When decisions are made by an individual instead of by the team already created.
- n Some positions in the organization have a knee-jerk reaction to certain situations without considering system-wide impacts.
- n Prior to the Traffic Advisory Task Force in my village (which is outside my regular position with the county), the mayor would make the decisions as to where traffic control was placed. This approach, while disastrous to regular traffic engineering, was worse for schools because he did not understand school routing.
- n The local schools appoint “Site Councils” that have zero expertise in this respect.
- n “Politicizing” the issue (village board, school board) in lieu of application of proper engineering principles.
- n School board decisions (sometimes political) for closing specific schools and leaving others open without regard to traffic impacts. For example, closing one school with a good circulation plan and leaving another open with obvious traffic circulation limitations—that become worse with increased enrollment.
- n Often times, concessions are made to parents who drop off and pick up their children near schools. These concessions usually provide for the parents’ convenience rather than the safety of the children.
- n Conflicting priorities. Lack of clear responsibility regarding traffic control outside public street right-of-way, i.e., school parking lots. Lack of communication with parents and students regarding traffic and pedestrian safety at schools.
- n Individual and PTA requests. The School Safety Committee should get any requests and evaluate them against a given set of criteria.
- n PTAs and emotionalism.
- n Parents demanding solutions before they can be determined if they are effective.
- n Typically school boards and PTA’s have their own solutions to problems and they can be difficult to deal with.
- n PTA groups and parents. They have all the answers and many times are the problem.
- n Having to deal with the various PTA/PTO organizations. They tend to be more emotional rather than practical.
- n PTO involvement.
- n Sometimes PTA, PTO, and neighborhood groups.
- n Political motive or demands by a minority.
- n School Department tends to “solve” its on-site problems by banning parents and relocating the problem to the public streets.
- n Problems have been encountered when the members of the school district’s safety committee are parents who are irrational, believe STOP signs at every corner are the answer, and create friction when they do not get their own way.
- n Occasionally the school district will endure private citizens approaching city council with school area traffic problems.

- n School principals are very quick to react to parental pressure; education of key school staff regarding practices/procedures is lacking.
- n School Transportation Department, Traffic Commission.
- n School superintendents.
- n The schools themselves.

**Lack of Communication or Cooperation**

- n Lack of communication between professional staff.
- n Lack of contact.
- n Lack of coordination between organizations.
- n No current means of communication between school administration and City Engineer for future plans.
- n No cooperation between city government and independent school board.
- n School district is separate entity from city. Little communication occurs between the school district and the city.
- n Board of education is a huge organization with little clear involvement in school traffic safety issues. Most problems are handled by citizens and local elected officials.
- n Large school board bureaucracy.
- n The sheer size of the school district and the current funding limitations for the city and the school district make it very difficult to adequately address all of the traffic-related

problems that occur. The school district includes approximately 450 schools that are located within the city.

- n Competition over funding and communication problems.
- n School administrators changing calendars and schedules and forgetting to notify us to adjust time clocks and reschedule adult crossing guards.
- n School administration generally uncooperative. Change school hours and districts without discussing with traffic engineer. This changes number and location of school crosswalks. Administration then notifies us of problems.
- n USD has always had the attitude that their responsibility begins at the school property line: up to there it is the city's problem. There are some potentially good changes in the works, however. They are drawing new school boundaries now, in anticipation of opening new schools in 1995 and are considering many factors such as avoiding crossing major streets.
- n School districts stand behind legal opinion prohibiting districts from funding or supplying adult guards or from allowing district employees to "control" traffic. City disagrees. There is some friction between certain elected officials and school board members. Liability concerns discourage volunteer parents acting as crossing guards or patrol.
- n School district did not replace their safety officer after he retired.
- n Workload precludes routine inspections of school safety. School principals may not have the knowledge/training to recognize problems and request assistance.

- n Misconceptions about the effectiveness and consistency of response to traffic control and regulations.
- n School arrival and dismissal times tend to coincide with Police Traffic Division “bad times” (i.e., a.m.—commuter hours, when priority is accident response; and p.m.—shift change time).
- n We have no rules or regulations to help explain why certain things have precedence over others. Solutions could be made quicker with rules and regulations in effect.

